

Title: SELECTIVE DEPOSITION OF SOLDER BALL CONTACTS

- b2
9. (First Amended) A method of forming a solder ball contact, comprising:  
forming a metal contact pad on a substrate;  
forming an insulating layer on the metal contact pad;  
removing a portion of the insulating layer to expose a portion of the metal contact pad,  
thereby forming an exposed portion of the metal contact pad;  
immersing the substrate in molten solder;  
depositing solder on the exposed portion of the metal contact pad, thereby forming a  
solder contact; and  
annealing the solder contact to form a solder ball contact having a diameter in a range of  
about 2.5 microns to no greater than 100 microns.
- b3
12. (Twice Amended) A method of forming a solder ball contact, comprising:  
forming a metal contact pad on a substrate;  
forming an insulating layer on the metal contact pad;  
removing a portion of the insulating layer to expose a portion of the metal contact pad, thereby  
forming an exposed portion of the metal contact pad, the exposed portion having a predetermined  
diameter;  
adsorbing reactants on the exposed portion of the metal contact pad;  
reacting the reactants on the exposed portion of the metal contact pad, thereby forming a  
solder contact; and  
annealing the solder contact to form a solder ball contact having a diameter in a range of  
about 2.5 microns to no greater than 100 microns.
13. (Twice Amended) A method of forming a solder ball contact, comprising:  
forming a metal contact pad on a substrate;  
forming an insulating layer on the metal contact pad;  
forming a resist layer on the insulating layer;  
patterning the resist layer to define a future exposed portion of the metal contact pad;  
removing a portion of the insulating layer to expose a portion of the metal contact pad,  
thereby forming the exposed portion of the metal contact pad, the exposed portion having a

predetermined diameter;

B3  
amul  
electrolytically depositing solder on the exposed portion of the metal contact pad, thereby forming a solder contact;

removing the resist layer, thereby exposing the solder contact above a surface of the insulating layer; and

annealing the solder contact to form a solder ball contact having a diameter in a range of about 2.5 microns to no greater than 100 microns.

16. (Twice Amended) A method of forming a solder ball contact, comprising:

forming a metal contact pad on a substrate;

forming an insulating layer on the metal contact pad;

forming a resist layer on the insulating layer;

patterning the resist layer to define a future exposed portion of the metal contact pad;

removing a portion of the insulating layer to expose a portion of the metal contact pad, thereby

B4  
forming the exposed portion of the metal contact pad, the exposed portion having a predetermined diameter;

electrolytically depositing a first metal layer on the exposed portion of the metal contact pad;

electrolytically depositing a second metal layer on the first metal layer, wherein the first metal layer and the second metal layer form a solder contact;

removing the resist layer, thereby exposing the solder contact above a surface of the insulating layer; and

annealing the solder contact to form a solder ball contact having a diameter in a range of about 2.5 microns to no greater than 100 microns.

Please add new claims 64-67 as follows:

B5  
Sub  
47  
64. (New) The method of claim 8 wherein annealing the solder contact further comprises annealing the solder contact to form a solder ball contact having a diameter of approximately 2.5 microns.